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ABSTRACT

The study reported in this document is a follow-up to earlier reviews of drugs and other youth problems. It addressed the current status of and the recent trends in teenage drug use, pregnancy, and dropping out of school, and the post-1987 research about the relationship between teenage drug use and either pregnancy or dropping out. Statistics from public and private agencies were evaluated to describe trends in basic rates of these behaviors. Although the data on teenage drug use displayed a downward trend, reporting problems and estimating errors hindered their interpretation. It seems unlikely that actual drug use has risen between 1979 and 1988 among youths overall, or among individual racial or ethnic groups. The 1985 data on teenage pregnancy indicated large disparities in the pregnancy, birth, and abortion rates for women 15 to 19 years of age, while nonWhite and Hispanic teenagers appeared much more likely to become pregnant. Research on dropouts indicated that teenagers were leaving school less frequently than in the past. Also, Black students had substantially decreased the gap between their dropout rates and those of White students. Hispanics and Native Americans continued to drop out of school at rates considerably higher than those of White or Black students. (BHK)

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United States General Accounting Office

GAO

Report to the Chairman, Select Committee on Narcotics Abuse and Control, House of Representatives

January 1991

TEENAGE DRUG USE

Uncertain Linkages With Either Pregnancy or School Dropout

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United States
General Accounting Office
Washington, D.C. 20548

Program Evaluation and
Methodology Division

B-241016

January 15, 1991

The Honorable Charles B. Rangel
Chairman, Select Committee on
Narcotics Abuse and Control
House of Representatives

Dear Mr. Chairman:

You requested that we look for new information on the relationship between teen drug use and either pregnancy or dropping out of high school—that is, information that has appeared in the literature since the Committee's 1986 and 1987 reports on the subject. The present report describes data we found on trends in each of the three problems and presents our analysis of recent research on how they may be linked.

The Committee's earlier reports discussed youth problems, using various kinds of evidence, and also identified difficulties that confront researchers trying to connect drug use and other problems. The reports concluded that additional research was needed to better understand the relationships between teen drug use and either teen pregnancy or quitting school.

We searched the published scientific literature. (We decided against using arrest data because of difficulties in comparing across geographic boundaries.) We also contacted experts in adolescent behavior to locate other studies or data since the Committee's last report in 1987, to answer two main questions: (1) What is the current status of, and what are recent trends in, teen drug use, pregnancy, and dropping out of school? (2) What has research learned since 1987 about the relationship between teen drug use and either pregnancy or dropping out? This report elaborates on the briefing we provided congressional staff on June 15, 1990.

Data on Teen Risk Behavior Show Decreases in Drug Use

We gathered data on trends in teen drug use since 1979, teen pregnancy since 1972, and dropping out of high school from 1978 and earlier. Teens self-reported slightly less drug use in 1988 than in 1979 but technical problems with the two national surveys make interpretation difficult. It could be that the willingness to report using drugs has declined rather than the actual use of drugs. However, it seems unlikely that this would account for all of the decrease. We found that teen pregnancy,

birth, and abortion rates remain relatively stable. There has been a steady decrease in the high school dropout rate during this period.

Insufficient Evidence Linking Teen Drug Use to Other Problems

We found two studies of adequate size conducted since the Committee's last report that incorporated both teen drug use and either pregnancy or school leaving. Despite their recent publication, neither used data reflecting teen behavior after 1981. These studies were not only dated, but problems in the studies' methods also limited the usefulness of conclusions about links among teen behaviors. Thus, we were unable to present current findings from sound research on teen drug use and pregnancy or dropping out of school.

The limitations that we identified are not restricted to the two studies we reviewed. That is, the results of many earlier studies that relied on similar methods may be equally uncertain. We present an analysis of the problems of research in this area to encourage careful evaluation of the information that is available on teen risk behavior.

We did, however, find a 1989 Canadian study that surveyed high school students, high school dropouts, and college students on a variety of health risks and behaviors. We include this study to underscore the importance of using surveys to assess a wide range of problem behaviors among diverse populations.

We also found one careful long-term study of the personality development of a group of 100 children, which included data on drug use in adolescence. The researchers' basic choice to focus on a small group of California youths means that the study cannot be generalized to all youths. However, it did allow them to obtain far more detailed information about the children than surveys could have provided. Thus, they were able to look at early experiences and developmental differences among young children who later became frequent drug users, drug "experimenters," or abstainers by age 18.

The California study is not the first to provide an in-depth analysis of youth development. However, it is the most recent example we found of the type of research that captures the multidimensional nature of problem behavior during adolescence. This study shows, first, that despite the limited ability to generalize from it, strongly designed research can be conducted on drug issues. Second, the findings suggest that frequent drug users experienced a broad range of developmental difficulties as children, long before drug use began. This is consistent

with more general theories of adolescent development in which various risky behaviors, including early sexual experimentation, drug abuse, and quitting school can be viewed as manifestations of general difficulties that have earlier origins. Third, the researchers also reported evidence of "weak parenting" among parents of children who later developed problems of frequent drug use.

Implications

The basic data we reviewed showed little evidence that trends in the three youth problems—drug use, pregnancy, and dropping out of school—are increasing. Indeed, these problems may not be dramatically different in magnitude from those the nation has experienced in recent years.

The weaknesses of research on youth problems studied in isolation and the generally accepted research view that youth problems occur in clusters together imply that drug education efforts might be especially helpful when they address the multiple factors that underlie frequent drug use—for example, by helping more and more youths develop effective methods of dealing with the range of risky behaviors that are typically tempting to adolescents.

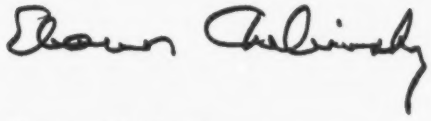
Efforts to strengthen family relationships may be especially useful in light of the apparent association found in one long-term study between weak parenting skills and later developmental problems of youths.

Finally, the need for stronger and more up-to-date knowledge about youth problems suggests that new research on teen risk behavior should attempt to answer questions about constellations of problem behaviors rather than one or two behaviors in isolation. Though we did not investigate research funding as a cause of the narrow focus and uncertain quality of the research we reviewed, these observations suggest that improved studies may result if research funds are allocated for broader efforts, covering longer periods of youth development, with investigators from diverse perspectives.

At your request, we did not ask federal agencies to comment formally on this report. As we arranged with your office, we plan no further distribution of this report until 30 days from its date of issue, unless you publicly announce its contents earlier. At that time, we will send copies to the Department of Health and Human Services and the Department of Education. We will also make copies available to interested organizations as appropriate and to others upon request.

If you have any questions or would like additional information, please call me at (202) 275-1854 or Robert L. York, Acting Director of Program Evaluation in Human Service Areas, at (202) 275-5885. Other major contributors to this report are listed in appendix V.

Sincerely yours,



Eleanor Chelimsky
Assistant Comptroller General

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Abbreviations

AGI	Alan Guttmacher Institute
CPS	Current Population Survey
GAO	General Accounting Office
HS&B	High School and Beyond
MSS	Michigan Senior Survey
NCES	National Center for Education Statistics
NCHS	National Center for Health Statistics
NHS	National Household Survey
NIDA	National Institute on Drug Abuse
NLSY	National Longitudinal Survey of Youth

Introduction

Background and Purpose

This report is a follow-up to earlier reviews of drugs and other youth problems by the House Select Committee on Narcotics Abuse and Control. The Committee's 1986 report Drugs and Dropouts (U.S. House of Representatives, 1986) discussed testimony and research on the topic, as well as problems of analysis. (For example, definitions of a dropout are not standardized; access to dropouts is limited; and following adolescents over time is difficult.) The Committee cited 18 research articles that addressed drug use and dropping out; the 10 articles that were published in the 1970's may be of limited use in describing today's adolescents. A second report by the Committee did not find additional research beyond that included in the first (U.S. House of Representatives, 1987). The Committee recommended actions by the National Institute on Drug Abuse (NIDA) and the Department of Education to provide better information about the problem of drug use among dropouts.

The Committee reports did not focus on the relationship between teen drug use and pregnancy. However, the reports noted that the problems that confront those studying school dropouts hinder those interested in teen pregnancy as well. The Committee recommended that the Department of Health and Human Services focus attention on the problem of drug use among pregnant teenagers.

In November 1989, the Committee asked us to look for any new evidence since its 1987 report on drug use, pregnancy, and dropping out of school.

Objectives, Scope, and Methodology

We addressed two main questions:

- What is the current status of and what are recent trends in teen drug use, pregnancy, and dropping out of high school?
- What has research learned since 1987 about the relationship between teen drug use and either pregnancy or dropping out?

To describe trends in basic rates of these three behaviors, we gathered and evaluated statistics from public and private agencies. We did not find it necessary to select between competing sources. There is common agreement on the most reliable general sources of statistical data on the three, though all have limitations, as we note in each case. We found data primarily at the national level; although we searched for usable state and local data, we found few. We used data going back to 1979 for drug use, 1972 for pregnancy, and 1968 for school dropouts. We considered, and rejected, the possibility of using data on drug-related arrests

of youths, which might provide detailed geographic breakdowns. Differences in police behavior toward youths in different areas, however, make the data less reliable for such comparisons.

We defined drug use to include the use of illicit drugs as well as any nonmedical use of prescription drugs. The Committee requested that we focus on drug use; therefore, we did not include alcohol or tobacco in either our review of the trends or the literature on their relationships with pregnancy or dropping out of school.

To describe new research since 1987 on links between drug use and either pregnancy or dropping out of school, as the Committee requested, we searched computerized data bases listing the published literature, obtained relevant materials, reviewed them, and evaluated each study on specific criteria. The Committee was primarily interested in these behaviors among typical adolescents. Therefore, we did not review literature that discussed these behaviors among juvenile delinquents, runaway or "street" youths, or youths in institutions. We reviewed every study that was published after 1987 that included both drug use and either pregnancy or dropping out of school.

We found six studies that met these two criteria. We then evaluated the studies on four dimensions: recency of data sources, soundness of research method, reliability and validity of findings, and generalizability of findings. We also contacted experts to ask about unpublished work, data that could be useful, and theoretical ideas guiding study in the area.

We did our work between February and July 1990. We conducted our work in accordance with generally accepted government auditing standards.

Appendix II presents the statistical data we found on trends in the three teen behaviors of drug use, pregnancy, and dropping out of school. Appendix III presents the results of our search for research linking drug use to the other two.

Trends in Teen Risk Behavior

In our examination of the rates of drug use, pregnancy, and dropping out of high school, we found no evidence of increases in recent years. In fact, the high school dropout rate has declined. The data thus appear to contradict the perception that today's youths are at increasing risk of problems of these types.

Teen Drug Use

We looked at existing data on trends in youths' illicit drug use from 1979 to 1988. All the existing surveys exclude some categories of youth. Thus, the estimates we report do not reflect trends in drug use among youths who are institutionalized, homeless, or living in group quarters such as military installations or dormitories.

Interpret Drug Use Data With Caution

Survey data on youth drug use require cautious interpretation. Only two national surveys of youth drug use exist, and neither one is flawless. For example, their estimates of youth drug use can be influenced by the honesty of self-reporting, which is affected by technical details of how the data are gathered as well as by broader changes in the social acceptance of drug use. Moreover, society's decreasing tolerance of drug use and the rising stringency of drug enforcement are likely to reduce the willingness to report drug use in surveys. This may create spurious declines in measures of the prevalence of drug use. In addition, the characteristics of both the populations included in a survey and excluded from a survey can influence estimates. For example, surveys of drug use often do not include youths at the greatest risk for drug use, such as street youths; including them would probably increase estimates. We discuss specific factors affecting our interpretation of such data below.

National Survey Data Sources

One major source of data on youth drug use is the Michigan Senior Survey (MSS) sponsored by NIDA (National Institute on Drug Abuse, 1989a).[1] The MSS has questioned high school seniors about their drug use since 1975. Each year, the MSS randomly selects approximately 125 to 135 of the nation's high schools to provide a representative cross section of high school seniors throughout the coterminous United States. From 66 to 80 percent of the selected schools have agreed to participate in the survey; within participating schools, the average student participation rate has been approximately 82 percent. Thus, between 1975 and 1988,

[1]The survey has "Michigan" in its informal title as it has been administered under contract by the Institute for Social Research at the University of Michigan. It is, in fact, nationwide in scope.

it is possible that the participation rate for all students who were eligible for the survey ranged from 54 to 66 percent. The average number of survey respondents for each year between 1975 and 1988 was about 17,000 students (16,000 in the specific years since 1979 we chose to examine). The survey is conducted in school classrooms, but the students are assured their responses are strictly confidential.

The MSS does not attempt to survey absent students or students who have dropped out of school. This may affect estimates of drug use in any given year. However, assuming that drug use among dropouts has not changed very much in recent years, the trend estimates are probably unaffected, because dropout rates have not changed dramatically for whites or Hispanics and have actually declined substantially for blacks. MSS officials indicate that they have preliminary data from 1988 on drug use by different racial and ethnic groups.

The second widely cited source of data is the National Household Survey on Drug Abuse (NHS), also sponsored by NIDA (National Institute on Drug Abuse, 1989b). This survey gathers data every 3 years on drug abuse among the U.S. household population, including all those age 12 and older.[2] By sampling only households, the NHS does not cover institutionalized or homeless populations, nor does it include individuals living in group quarters such as military installations or college dormitories. Households in all states except Alaska and Hawaii are surveyed. Trained staff gather the data in individual interviews in the home that are intended to be private. Specific answers to questions about drug use are not spoken aloud but are marked on a confidential answer sheet, which is sealed upon completion. Nonetheless, NIDA has found that the privacy of the interview has some effect on youths' willingness to report drug use (National Institute on Drug Abuse, 1988b). Racial and ethnic group breakdowns of the data are available. In recent years, the survey has oversampled blacks, Hispanics, and young people. However, NHS officials state that certain subpopulations (particularly young black males) are difficult to reach by the household survey technique. Therefore, those reached at home may not be representative of all youths. Between 1979 and 1988, sample sizes for youths age 12 to 17 varied from 1,581 to 3,095.

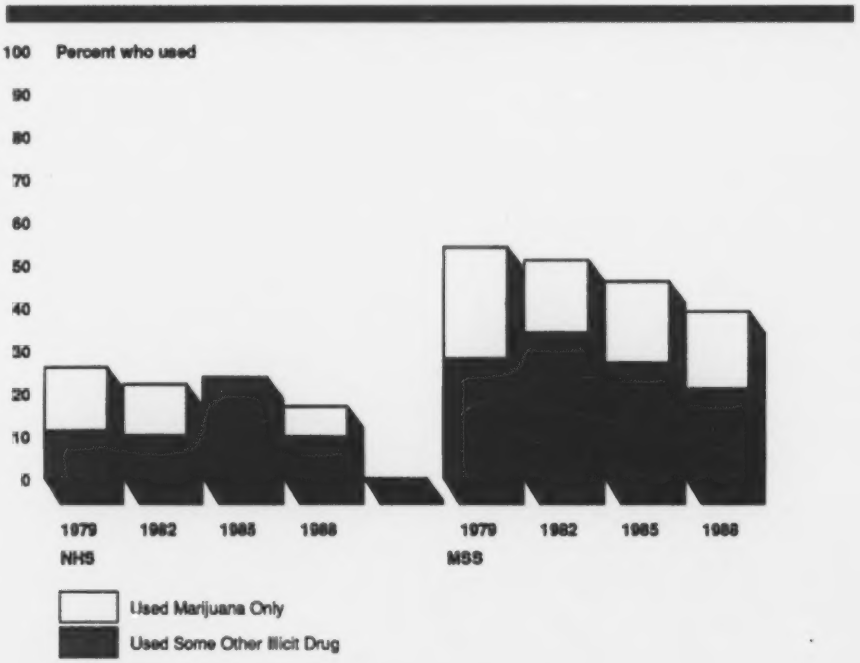
[2]The frequency has been yearly since 1988.

Reported Annual Drug Use

Reports from NHS and MSS researchers conclude that drug use declined between 1979 and 1988. We discuss the reliability and validity of estimating trends in illicit drug use based on self-reports.

We examined data from the two main surveys on youths' prior-year illicit drug use, for selected years where the surveys coincided, as shown in figure II.1. Illicit drugs are defined as marijuana and hashish, inhalants (excluded in the 1982 NHS), hallucinogens, cocaine, heroin, and the nonmedical use of stimulants, sedatives, and tranquilizers. For each year in the figure, the lower, darker segment of the bar represents an estimate for the use of illicit drugs other than marijuana; the upper, white segment of the bar represents an estimate for the use of marijuana only.

Figure II.1: Prevalence of Youths' Illicit Drug Use in the Past Year



Note: "Other illicit" drugs includes cocaine, hallucinogens, heroin, and the nonmedical use of psychotherapeutics. Inhalants are included in the NHS surveys in 1979, 1985, and 1988.

Source: NHS data are from NIDA, National Household Survey on Drug Abuse, unpublished tabulations. (Marijuana use only was not calculated for 1985.) MSS data are from NIDA, Drug Use, Drinking and Smoking: National Survey Results From High School, College, and Young Adult Populations, 1975-1988 (Washington, D.C.: U.S. Government Printing Office, 1989).

For example, in 1988 a total of 17 percent of NHS youth respondents reported using any illicit drug in the year prior to the survey; that is, 7 percent reported using marijuana only and 10 percent reported using illicit drugs other than marijuana. In comparison, a total of 39 percent of 1988 MSS respondents reported any illicit drug use; 18 percent reported that they had used marijuana only and 21 percent reported the use of illicit drugs other than marijuana.

The NHS estimates are lower than the MSS estimates across all reporting years. There are two possible explanations for this discrepancy. First and most importantly, the NHS sample includes youths between the ages of 12 and 17, while the MSS sample includes only high school seniors, who are older and thus more likely to have used drugs. Second, survey administration differs, as mentioned above; as a result, drug use may be reported more frequently on surveys done anonymously in school than on forms filled out at home, possibly with parents near by.

Also, changes in question formats and reporting criteria can affect trend interpretation. For example, in 1982, MSS officials noted that high school seniors were including the use of nonprescription stimulants, such as caffeine pills or diet pills, in their reports of stimulant use. As a result of this observation, MSS officials reworded questions about stimulant use so that over-the-counter, nonprescription stimulants were excluded from the seniors' reports. For the years prior to this change, the researchers report two estimates for stimulant use, one with and one without nonprescription stimulants, and two estimates for total illicit drug use, one with and one without all stimulants.

The corrections are informative for two reasons. First, they highlight the misunderstandings that can occur when people answer questions about drug use. Second, uncorrected estimates show increases in reported drug use between 1975 and 1981, while corrected estimates show almost no change in reported drug use between 1975 and 1981. Both estimates show gradual decreases thereafter. The MSS estimates we report do not include nonprescription stimulants. NHS reports do not mention similar changes in stimulant-use questions. Therefore, we could not correct for this in the NHS estimates we report.

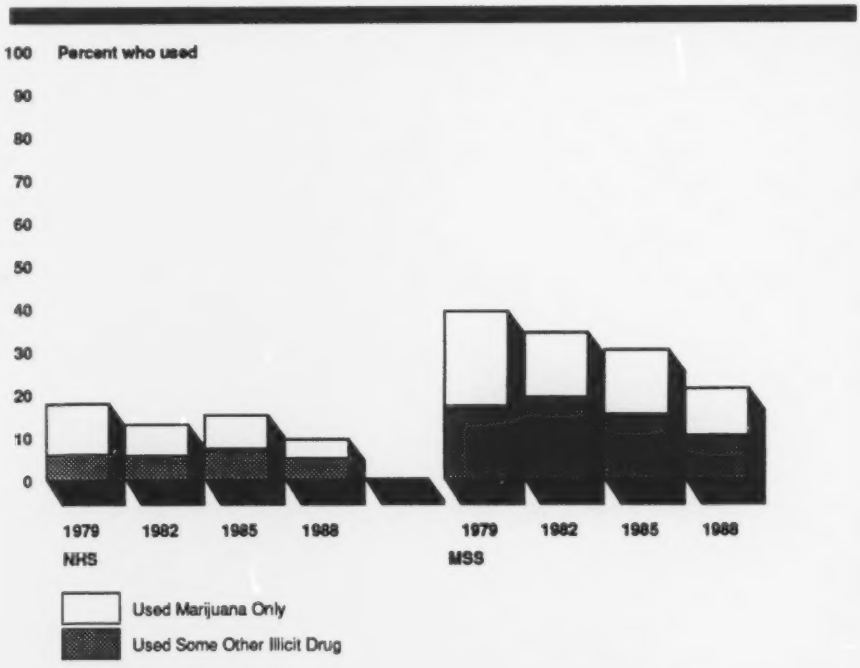
In summary, both studies find a decline in reported drug use between 1979 and 1988. For reasons discussed above, it is possible that the willingness to report using drugs has declined rather than the actual use of drugs. However, it seems unlikely that this would account for all of the decline. Indeed, decreases in seniors' reported drug use are accompanied

by increases in both the disapproval and perceived harmfulness of drug use. Moreover, in recent years fewer seniors report that their friends use drugs. Presumably, reports of friends' drug use are more reliable indicators of actual use as they are less susceptible to those factors that influence the willingness to report honestly about one's own behavior.

Reported Monthly Drug Use

Annual estimates include all reports of drug use within the past year, regardless of the frequency of use. Both the MSS and the NHS consider questions about drug use in the past month to be better indicators of frequent drug use. However, reports of youths' drug use in the past month also appear not to have changed much in recent years. See figure II.2. For example, 9 percent of 1988 NHS respondents reported using any illicit drug in the month preceding the survey, 4 percent reported using marijuana only, and 5 percent reported using drugs other than marijuana. For reasons stated above, the MSS estimates are higher than the NHS estimates: 21 percent of 1988 MSS respondents reported using any illicit drug in the month preceding the survey, 10 percent reported using marijuana only, and 11 percent reported using drugs other than marijuana.

Figure II.2: Prevalence of Youths' Illicit Drug Use in the Past Month



Note: "Other illicit" drugs includes cocaine, hallucinogens, heroin, and the nonmedical use of psychotherapeutics. Inhalants are included in the NHS surveys in 1979, 1985, and 1988.

Source: NHS data are from NIDA, National Household Survey on Drug Abuse, unpublished tabulations. (Marijuana use only was not calculated for 1985.) MSS data are from NIDA, Drug Use, Drinking and Smoking: National Survey Results From High School, College, and Young Adult Populations, 1975-1988 (Washington, D.C.: U.S. Government Printing Office, 1989).

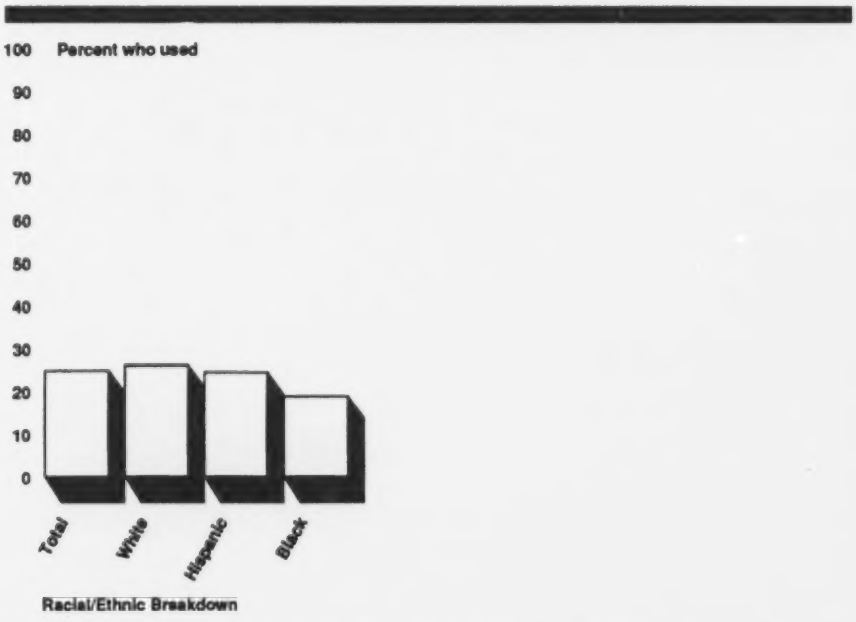
Both MSS and NHS researchers have concluded that reported drug use in the past month declined between 1979 and 1988. For the same reason discussed above, this may or may not fully reflect a declining trend in actual drug use.

No Evidence for Differences in Reported Drug Use by Race

We considered the possibility that reports of drug use in the general youth population may hide important differences in drug use among subgroups. However, when the possibilities of reporting and estimating errors are considered, we found no evidence of major differences among youths of different racial and ethnic backgrounds: 26 percent of white youths, 24 percent of Hispanic youths and 19 percent of black youths, according to the NHS, have used some illicit drug in their lifetimes. See

figure II.3. However, it should also be noted that NHS officials have indicated that certain subpopulations are difficult to reach at home; therefore, those who are home may not be representative of all youths. While published data on racial differences in drug use by seniors are currently unavailable, officials of the MSS told us that their own review of the 1988 data confirmed the NHS observation of small differences. Although this pattern may not hold for older respondents, the available youth data appear to contradict the common perception that minority youths engage in more illicit drug use than white youths.

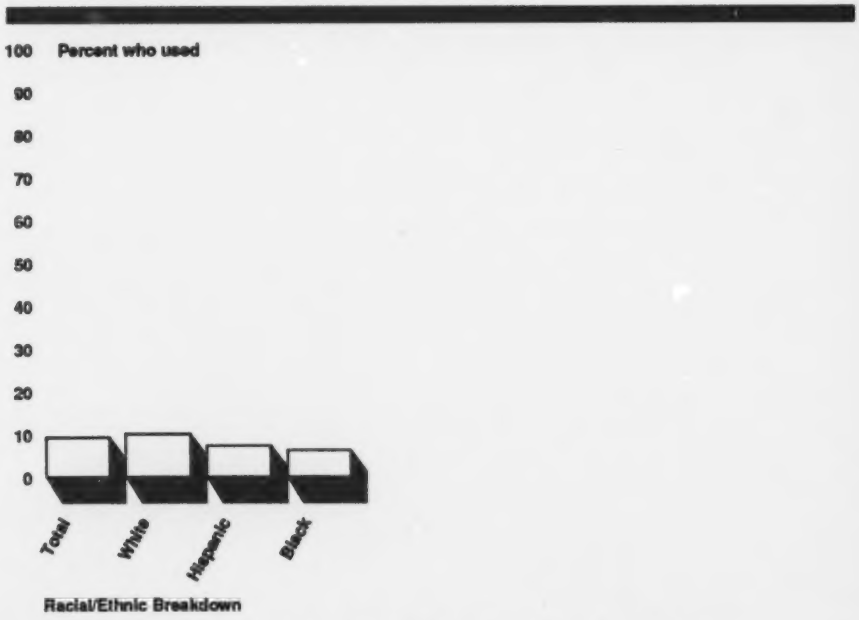
Figure II.3: Lifetime Prevalence of Illicit Drug Use for Youths 12-17 by Race and Ethnicity in 1988



Note: These data are cross-sectional and represent prevalence estimates for 1988 only.
Source: NIDA, 1988 National Household Survey on Drug Abuse.

We found no evidence of major differences in reported drug use in the past month among youths of different racial and ethnic backgrounds surveyed by the NHS. This was consistent with lifetime drug use estimates. See figure II.4. Again, MSS officials told us that their data are consistent with those from the NHS.

Figure II.4: Prevalence of Illicit Drug Use in the Past Month for Youths 12-17 by Race and Ethnicity in 1988



Note: These data are cross-sectional and represent prevalence estimates for 1988 only.
Source: NIDA, 1988 National Household Survey on Drug Abuse.

Summary of Drug Use Trends

Although the data display a downward trend, reporting problems and estimating errors hinder their interpretation. It seems unlikely that actual drug use has risen between 1979 and 1988 among youths overall or among individual racial or ethnic groups, but we are unsure about whether the declines shown in the two national surveys are apparent or actual. We cite related survey findings such as decreases in reported drug use among friends that suggest a reduction in actual drug use among teens.

Teen Pregnancy, Births, and Abortions

The Committee asked that we look at the relationship between teen drug use and pregnancy. We began with an examination of recent trends in teen pregnancy, births, and abortions from 1972 to 1987. We include information on all three because estimates of births and abortions are used to calculate pregnancy rates. We also looked at 1985—the most recent—estimates for pregnancy, births, and abortions for young women of different racial and ethnic backgrounds. In general, trends for all three behaviors among 15- to 19-year-olds have been relatively stable

since 1979. However, there are substantial disparities among women of different racial and ethnic backgrounds.

Data Sources and Definitions

Comprehensive data on teen pregnancy are collected by the Alan Guttmacher Institute (AGI), a private nonprofit organization that compiles estimates of the number of births, legal abortions, and miscarriages to obtain estimates of the total number of teen pregnancies for a given year (Henshaw et al., 1989). Birth data are tabulated and published each year by the National Center for Health Statistics (NCHS).

In our view, estimates of the total births each year can be considered accurate because they are based on birth certificates. Estimates by race and ethnicity are not as precise because of ambiguities of classification. NCHS classifies the race of a child as "nonwhite" if either of the parents is nonwhite. As a result, the actual number of black mothers is 4.3 percent lower than the number of births classified as black, and the actual number of white mothers is 1.6 percent greater than the number of births classified as white. The classification of Hispanic origin of the mother on birth certificates is inconsistent, and the extent of inaccuracies in estimates of Hispanic births is not known. Moreover, because it is unclear whether any of these general patterns apply to teen birth classifications, AGI makes no corrections in its estimates of teen birth rates.

AGI compiles abortion data from three different sources to include in its pregnancy statistics. First, AGI counts the number of abortions performed in each state by periodic surveys of all U.S. abortion providers. Second, AGI analyzes data from the Centers for Disease Control to obtain the ages and other characteristics of abortion patients. Third, AGI uses NCHS data on all abortions reported to state health agencies of 13 states. Estimates of the number of abortions by age of the patient are available only through 1987. The abortion data are classified by the race of the woman.

Bureau of the Census population estimates are used to calculate national rates of abortion and birth. Teen pregnancies will be underestimated because statistics are presented for age at pregnancy outcome rather than age at conception. Thus, many of the births for 20-year-old women represent pregnancies begun at age 19. Pregnancy rates include the estimated number of miscarriages, which are calculated as 20 percent of the number of live births plus 10 percent of the number of abortions.

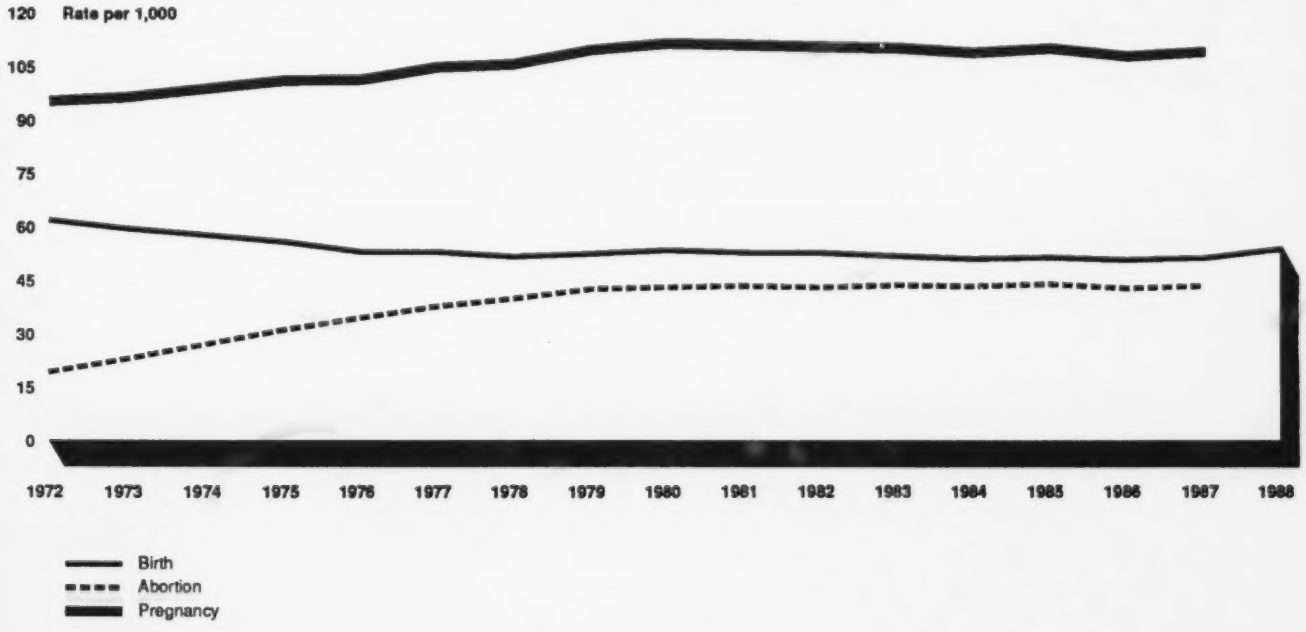
Trends in Pregnancy, Births, and Abortions

Between 1972 and 1980, the pregnancy rate among women age 15 to 19 rose from 95 per 1,000 to 111 per 1,000. In contrast, the birthrate fell from 62 to 53 per 1,000 as abortion rates rose from 19 to 43 per 1,000. Since 1979, however, AGI characterizes all three trends as relatively stable.

Over 1 million teens have been pregnant each year since 1973. In 1985, for example, 1,031,040 teenagers were pregnant. In addition, an estimated 190,000 teens conceived pregnancies that ended in live births, abortions, or miscarriages after their 20th birthday. Of those teen pregnancies, 477,705 ended in live births, 416,170 in induced abortions, and the remainder in miscarriages or stillbirths.

In 1972, the pregnancy rate among women age 15 to 19 was 95 per 1,000. See figure II.5. By 1980, the rate had risen and peaked at 111 per 1,000; then it declined somewhat to 109 per 1,000 in 1987.

Figure II.5: Birth, Abortion, and Pregnancy Rates Per 1,000 Women Age 15-19 in 1972-88



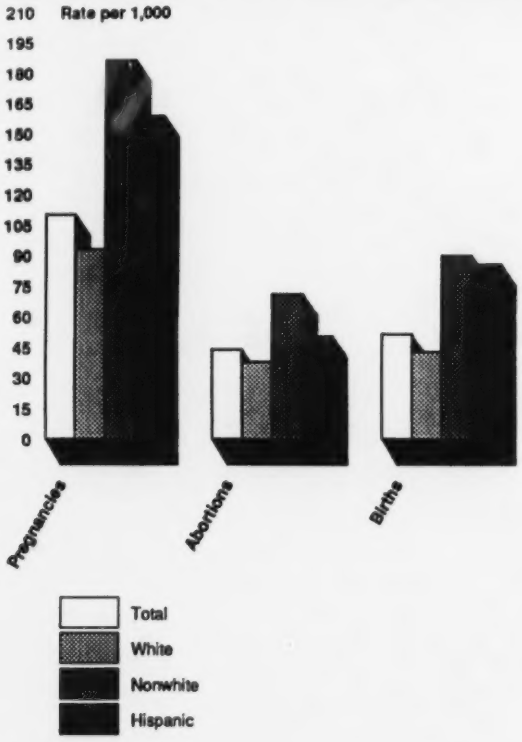
Source: Alan Guttmacher Institute

In contrast, the birth rate for these young women fell sharply between 1972 and 1978 from 62 to 52 births per 1,000. In 1980, the birth rate was 53. Between 1980 and 1988, the birth rate fluctuated up and down slightly from as low as 50.6 in 1986 to 53.6 in 1988. AGI officials told us that 3 percent of the overall 6-percent increase in the birth rate between 1986 and 1988 can be explained by the increased proportion of 18- to 19-year-olds in the 15- to 19-year-old age group. Historically, these older youths have higher birth rates (82 in 1988) than their 15- to 17-year-old counterparts (34 in 1988).

Abortion rates rose during the 1970's to 43 per 1,000 in 1980 and remained stable through 1987. AGI characterizes all three measures as relatively stable since 1979.

There are, however, large differences by race. Figure II.6 presents 1985 pregnancy, abortion, and birth data for white, nonwhite, and Hispanic teens. In 1985, the pregnancy rate for white teens was 93 per 1,000; the rate for nonwhite teens was twice the rate for whites, at 186 per 1,000; and the pregnancy rate for Hispanic teens was between the rates for the two other groups at 158 per 1,000.

Figure II.6: Abortions, Pregnancies, and Births for Women Age 15-19 by Race and Ethnicity in 1985



Source: Alan Guttmacher Institute.

In 1985, 416,170 women under age 20 had abortions—a rate for all 15- to 19-year-olds of 44 per 1,000. The abortion rate for white teens was 38 per 1,000; for nonwhites, the rate was almost double this, at 71 per 1,000; and for Hispanic teens, the rate was 50 per 1,000. AGI cautions, however, that there are not significant racial and ethnic differences in the preference for terminating pregnancy by abortion. Indeed, the 1985 abortion-birth ratio is similar for white, nonwhite, and Hispanic women under age 20, at approximately 42. That is, 42 percent of teens who became pregnant opted for abortion, and 58 percent chose to carry the pregnancy to term.

In 1985, 477,705 teens gave birth. The birth rate for white teens age 15 to 19 was 43 per 1,000; for nonwhite teens, the rate was 90 per 1,000;

and for Hispanic teens, the rate was 86 per 1,000. Thus, both the nonwhite and the Hispanic birth rates were approximately double the rate for young white women.

Summary of Pregnancy, Birth, and Abortion Trends

The pregnancy, birth, and abortion rates for women 15 to 19 years old can be characterized as relatively stable since 1979. However, notwithstanding any data uncertainties, the 1985 data indicate that there are large disparities in all three rates for women of different racial and ethnic backgrounds, with nonwhite and Hispanic teens much more likely to become pregnant. AGI reports that trends were similar for whites and nonwhites between 1980 and 1985. However, in 1985, the abortion and pregnancy rates for nonwhites increased substantially.

High School Dropout Rates

The Committee also asked us to look at the relationship between drug use and dropping out of school. Again, we began by examining trends in the basic data on dropout rates from 1968 to 1988. We also looked at the rates among individuals living in communities of different sizes and individuals of different racial and ethnic backgrounds. In general, national dropout data do not support the public perception that dropout rates have been rising.[3]

Data Sources

The high school dropout rate has captured public attention and concern in recent years. Between 1987 and 1989, an estimated 429,000 students dropped out of school each year without obtaining a diploma. Moreover, in 1989, an estimated 4 million people age 16 to 24 were not enrolled and had not completed high school. Unfortunately, current measurement techniques lack the precision and consistency necessary to answer many of the important questions about this topic. The National Center for Education Statistics (NCES) created a task force to work with states to develop and test more effective methodologies for measuring dropout and retention rates. There is a pilot program of improved data collection, and according to Department of Education officials, the first data will be available in 1991.

Meanwhile, the NCES report, Dropout Rates in the United States: 1989, presents the best available data on trends in high school dropout rates

[3]The high school graduation rate—72 percent in 1988, for example—is frequently cited by the media and can be mistaken as an indirect measure of the dropout rate (28 percent in this example). However, it is not correct to conclude that students not graduating are dropouts, except in the short term. Many are still attending school or will complete high school later.

from 1968 through 1989 (Kaufman and Frase, 1990). The report used data from the Current Population Survey (CPS). The CPS is conducted by the Bureau of the Census using a nationally representative sample of all households whose members are asked about high school graduation. The CPS is the only available national data source for estimating the numbers dropping out each year or the total group that completed school.

The NCES report for 1988 (Frase, 1989) also included data from the High School and Beyond Survey (HS&B). HS&B is a longitudinal study sponsored by NCES that repeatedly questioned two sets of students selected in 1980 as sophomores and seniors, from 1980 through 1986. About 30,000 were in the original group of 1980 sophomores. The dropout information was obtained in the third follow-up of these students in 1986. All respondents were counted as dropouts unless they stated that they had graduated with their class in spring 1982 (or earlier). Thus, HS&B dropout estimates include students who reported that they had left school before graduating in 1982 but later received (or were currently working toward) a high school equivalency degree or a regular high school diploma. The HS&B data base includes substantial background information about the students that allows analyses of dropout rates for different subpopulations of students.

How Dropouts Are Defined

The dropout rate can be defined three different ways, each of which provides unique information. The event dropout rate measures the proportion of students who quit school each year. This type of rate may be commonly used by school districts, which can readily count those who leave. Such rates can be misinterpreted as showing students' ending their schooling, however, since they do not reflect students who reenroll elsewhere. The status dropout rate helps correct this by measuring, at a given time, the proportion of individuals who have not completed high school and who are not enrolled in any school. They are always higher than event dropout rates because they reflect the cumulative effect of the annual event dropout rate across several years. Cohort dropout rates indicate the high school completion and dropout rates for a single group, or cohort, of students followed across time. As in HS&B, when other information is available about a cohort, stronger conclusions can be drawn about underlying factors that influence persistence in school.

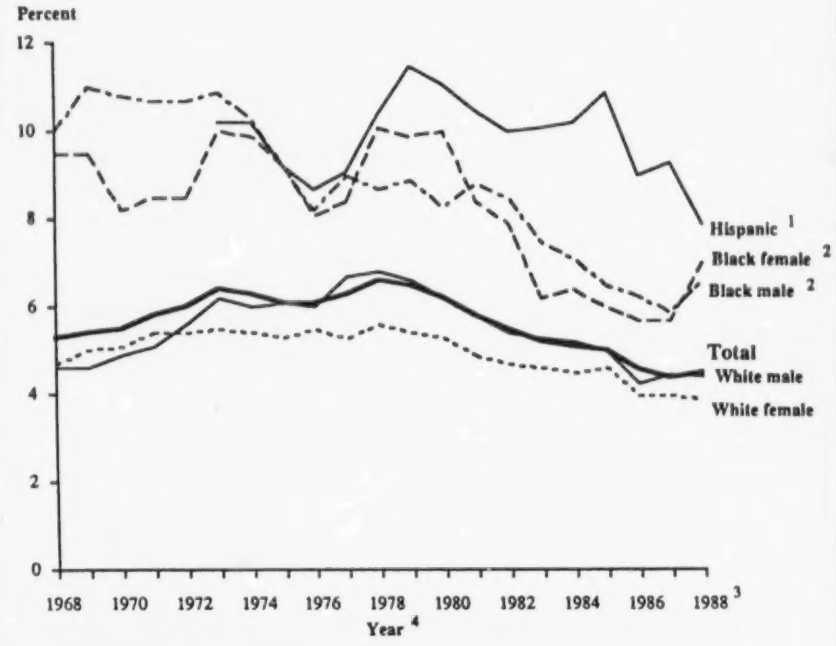
Event Dropout Rates

The NCES report (Kaufman and Frase, 1990) presents 3-year average event rates, which may be more trustworthy than 1-year rates (because

measurement and sampling errors can unduly influence single-year estimates). Overall, the event dropout rate has been declining since 1978, from 6.6 percent to an average of 4.5 percent for the 3 years 1987-89. In absolute numbers, this represents 429,000 15- to 24-year-olds in grades 10 to 12 who dropped out of school without obtaining a diploma each year from 1987 to 1989.

There remain substantial disparities in event dropout rates by racial and ethnic group: in general, minority students were more likely to drop out of school than nonminority students, and Hispanic students are a great deal more likely to do so than all others. See figure II.7. The rate for white students dropped consistently after 1978 to reach a 3-year average of 4.1 percent in 1987-89. For black students, rates generally declined over the entire 21-year period from 1968 to 1989, to 6.8 percent in 1987-89.

Figure II.7: Average Event Dropout Rate From Grades 10-12, Ages 14-24, by Race and Ethnicity and by Sex in 1968-88



[1] Hispanics may be of any race.
[2] Given the relatively large standard errors of these estimates, the apparent increases in black male and female dropout rates between 1986-88 and 1987-89 are *not statistically significant* and may be caused solely by sampling error in the estimates.
[3] Due to a procedural change in CPS, the rate for 1988 is for 15- to 24-year-olds only. The event dropout rate for grades 10-12 is not affected by changing the age group from 14-24 to 15-24.
[4] The year represents the middle of the three years over which rates are averaged. Thus the rate for 1988 is the average of the single-year rates for the 12-month periods ending October 1987, 1988, and 1989.

Note: The moving three-year averages plotted in this figure portray general trends in dropout rates over time. However, the change from one three-year average to the next, i.e. from 1986-88 to 1987-89, should not be interpreted as representing the change from one year to the next, i.e. from 1987 to 1988.

Source: R. Kominski, "Estimating the National High School Dropout Rate," Demography, Vol. 27, No 2, May 1990; U.S. Department of Commerce, Bureau of the Census, "School Enrollment--Social and Economic Characteristics of Students, October (various years)," Current Population Reports, Series P-20, and unpublished tabulations, as published in Phillip Kaufman and Mary J. Frase, Dropout Rates in the United States: 1989, National Center for Education Statistics (Washington, D.C.: U.S. Department of Education, 1990).

Hispanic dropout rates, however, have been the highest of all groups since data were first collected in 1972; they stood at 7.9 percent for 1987-89, or almost double the white rate and higher than the black rate as well. The Hispanic data series has also been more erratic; NCES states that the CPS employs a small sample size for this population, which increases the margin of estimation error to 1 percent or more and hinders the ability to look at differences in event dropout rates between Hispanic males and females.

Summary of Event Dropout Trends

In general, national data suggest that while any persisting degree of school leaving is worrisome, there may be no occasion for special alarm over any recent changes in the annual rate of students dropping out of high school. On the contrary, the recent history is favorable: rates increased between 1968 and 1978 but that trend has reversed and the rate has been steadily decreasing for a decade. In addition, black students have substantially decreased the gap between their dropout rates and those of white students.

Notwithstanding some degree of imprecision, the high estimates of the dropout rate among Hispanic students indicate that this population deserves special consideration both in efforts to assess the dropout problem in the U.S. and in the planning of dropout prevention programs.

Status Dropout Rates

In 1989, approximately 12.6 percent of the young people age 16 to 24, or 4 million individuals, were not enrolled and had not completed high school. In view of the increasing educational needs and requirements of modern society and the economy, this number is still cause for concern, but it does represent a continuing downward trend from 1968, when the status dropout rate was 16 percent. (In 1986, the rate bottomed at 12 percent; between 1987 and 1989, there was an increase to 12.6 percent.)

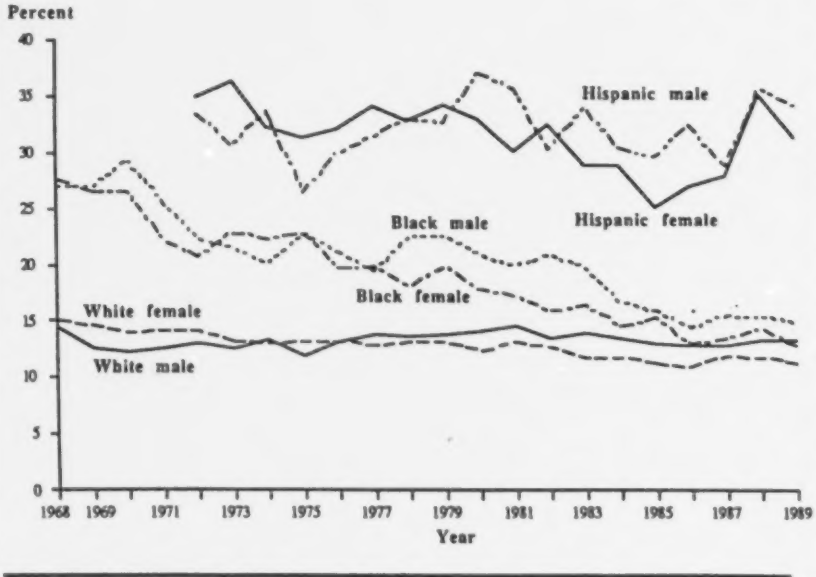
As with event dropout rates, there are considerable differences in status dropout rates among various subpopulations. In general, rates for females steadily declined by almost 5 percentage points between 1968 and 1989; they currently stand at 11.7 percent. However, the current 13.6 percent rate for males is only 2.5 percentage points lower than it

was in 1968; 1976 was the last year the female status dropout rate was higher than the rate for males.[4]

Status dropout rates for blacks also improved considerably over the 21-year measurement period. See figure II.8. In 1968, the 27-percent rate for blacks was almost two times the 15-percent rate for whites. In 1989, however, the status dropout rate for blacks had dropped to 14 percent, virtually the same level as that of whites; black females were somewhat less likely to drop out than their male counterparts. White dropout rates, in contrast, have been more resistant to change; rates for young white women declined from 15 percent in 1968 to 11 percent in 1989 and those for young white men did not decline at all over the past 20 years.

[4]NCES believes that because the CPS surveys only the civilian population, some of the difference between male and female trends may reflect the effects of the Vietnam draft as well as later increased military standards for voluntary recruits that eliminated the armed forces as an alternative for dropouts.

Figure II.8: Status Dropout Rates, Ages 16-24, by Race and Ethnicity and by Sex From October 1968 to 1989



NOTE: Hispanics may be of any race.

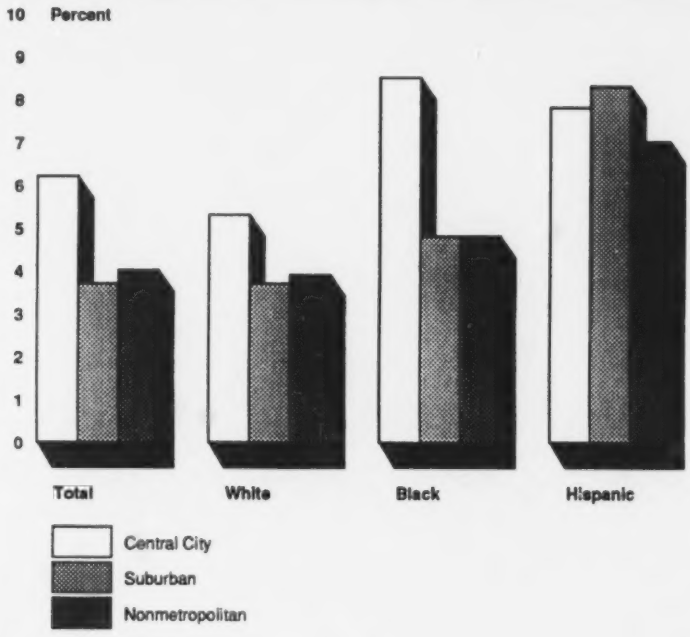
Source: U.S. Department of Commerce, Bureau of the Census, "School Enrollment—Social and Economic Characteristics of Students, October (various years)," Current Population Reports, Series P-20, and unpublished tabulations, as published in Phillip Kaufman and Mary J. Frase, Dropout Rates in the United States: 1989, National Center for Education Statistics (Washington, D.C.: U.S. Department of Education, 1990).

Status dropout rates for Hispanics remained erratic and high throughout the 17-year measurement period and stood at 33 percent in 1989. The rate for Hispanic males did not decline. However, there was a slight decline in the rate for Hispanic females. Again, NCES cites small CPS sample sizes as a factor in the large variations in the rate. Moreover, because the Hispanic student population has increased from about 2.5 million in 1980 to about 3.5 million in 1989, Hispanics now constitute a greater proportion of all dropouts.

Other Characteristics of Dropouts

We looked for differences among the racial and ethnic groups according to residence—rural, urban, suburban. See figure II.9. NCES cautions, however, that all of the apparent differences in the dropout rates among the different racial and ethnic groups are not statistically significant because of small sample sizes. We concluded that the event dropout rate is somewhat higher for those living in central cities and for blacks and Hispanics, regardless of where they live. However, the majority of those who dropped out of school each year between 1987 and 1989 were white (75 percent) and did not live in central cities (62 percent).

Figure II.9: Average Event Dropout Rate From Grades 10 to 12 for Youths Age 14-24 by Race, Ethnicity, and Community Size in 1987-89



Note: Hispanics may be of any race.

Source: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, unpublished tabulations.

The HS&B data base provides additional insight into various characteristics related to not completing high school with one's original class. HS&B analysts report that the cohort dropout rates in the 1980 sample of high school sophomores were similar to the rates from CPS survey data for whites, blacks, and Hispanics. In addition, information about two other racial groups is available from the HS&B survey. Specifically, the cohort dropout rate for Asian students in the sample was 8.2 percent; thus this group was the least likely of any in the class of 1982 to quit. The rate for American Indian and Alaskan Native students was 35.5 percent—or as high as the Hispanic student rate. HS&B data also indicated that students from non-English-speaking homes, students from single-parent families, and students of lower socioeconomic status were more likely to drop out of school than their counterparts.

However, in absolute terms, both minority students and culturally disadvantaged students constituted a relatively small proportion of the total number of HS&B students who dropped out of school. For example, 66 percent of all dropouts were white; 87 percent were from English-speaking homes; 68 percent came from two-parent families; 80 percent had no children; 71 percent had never repeated a grade; 60 percent maintained grades of C or better; and 79 percent had missed fewer than 11 days of school between September and December 1979.

Summary of Dropout Trends

The data on dropout rates in the United States do not support the pervasive view that the dropout rate is very high and increasing. Since 1978, event and status dropout rates have declined steadily. Moreover, in recent years, differences in dropout rates for blacks and whites have been substantially reduced. However, Hispanics and Native Americans continue to drop out of school at rates considerably higher than those for other groups, and little improvement in the Hispanic rate can be seen in the data that are available to measure trends over time.

Teen Drug Use Correlates

The Committee asked us to provide information on the relationships between teen drug use and either pregnancy or high school dropout rates. In this appendix, we describe the problems we found in the few studies published since 1987; these problems prevented us from reaching any conclusions about the relationships of interest to the Committee. We also describe two other recent studies that do not provide generalizable data but do suggest directions for future work. These are a recent and comprehensive Canadian survey of in-school and dropout youths on a variety of risk behaviors and an exceptionally well designed 15-year study of 100 children and their parents that examined links among parenting styles, youth development, and teen behavior, including youth drug use.

Issues of Research Quality

We searched extensively in the published literature since 1987 and also contacted experts to be sure we had not missed anything. We found only six studies that had been published since the Committee's last report. We reviewed them to see whether their information and conclusions were sound. We judged the studies as not providing reliable answers to questions about links between drug use and either pregnancy or dropping out of school by today's youths. Problems included the shortcomings of widely used data bases and other limitations.

In our view, the limitations in the six studies were of sufficient magnitude to preclude the presentation of results. We also believe that these limitations are pervasive in this type of research and most likely call into question the conclusions of many earlier studies of teen risk behaviors that rely on similar methods. Therefore, we present our analysis of the general quality of the research in this area so that readers can carefully evaluate the reliability and validity of the information that is available on teen risk behaviors.[1]

Data Bases Are of Limited Use

We found two limitations in the data bases that cover one or another of the three teen behaviors: each includes only one of the three separate areas of interest to the Committee, or they are out of date. For example, the HS&B survey allows useful analyses of high school dropout rates, yet neither the original nor follow-up surveys asked about drug use or pregnancy. Similarly, the NHS and the MSS ask questions about drug use but

[1]Research is reliable when findings are repeatable: the conclusions can be generalized beyond the particular conditions in the initial research. Research is valid when the conclusions are true: they reflect the real world.

do not ask questions about quitting high school or pregnancy. These data bases provide important information about teens, yet their single focus renders them useless for our purposes.

The information from another large data base that includes questions about all three behaviors is so dated that its validity for today's youths is uncertain. Despite this, it was used in several recently published studies we reviewed. The National Longitudinal Survey of Youth (NLSY), originally designed to follow young people through their early years in the labor market, began in 1979 with interviews of 11,406 youths then age 14 to 21. The group has been surveyed each year ever since, either in person or by telephone, with as many as 90 percent still involved in 1987—by then age 22 to 29. The survey contains a core set of questions on the following topics: marital history, schooling, job and employer information, current labor force status, work experience and attitudes, military service, health limitations, fertility, income and assets, and geographic residence. In addition, from 1982 to 1985, the survey included questions about alcohol use; in 1985, it included questions about drug use; in 1988, it included both drug and alcohol use; and the survey included in-depth fertility questions from 1982 to 1986 and again in 1988.

In our view, the NLSY fulfills its original purpose by providing a picture of youth labor market experiences; however, its ability to describe relationships among teen problem behaviors is somewhat doubtful. We discuss this further in subsequent sections.

The Restriction Research Quality Places on Interpretation

We found a total of six pertinent studies published since the Committee's 1987 report. All had one or more problems that severely restricted their usefulness. We evaluated the six studies on four dimensions: recency of data sources, soundness of research method, reliability and validity of findings, and generalizability of findings.

Recency of Data Sources

We concluded that the data sources used in the two large studies were too outdated to provide a reliable picture of today's youths. Although both studies had publication dates after 1987, neither used data that reflected teen behavior after 1981. One study used data from 1981 interviews in one state where women (average age was 24) were asked to pinpoint the exact timing of past drug use and pregnancies. The other analyzed data from the 1984 NLSY in which respondents, who were then

age 19 to 27, provided retrospective accounts of teen drug use as far back as the late 1970's. In earlier years, the NLSY was a survey of youths, but the NLSY surveys from 1984 to the present are technically surveys of young adults. In fact, the 1986 survey included assessments of 4,971 children of female NLSY respondents.

Research has consistently found that people's memory for past events is not very reliable, particularly when they are asked to pinpoint the exact timing of those events over a long period (Brown et al., 1985; Huttenlocher et al., 1988; Thompson et al., 1988).

Soundness of Research Method

In general, we found that the six studies in these areas did not deal satisfactorily with methodological problems, including refusals, underreporting, and recruitment biases. For example, some portion of potential respondents usually refuse to participate in surveys. This percentage is likely to increase in surveys of controversial issues or behavior. While motivations for refusal vary, those who agree to be surveyed are different from those who refuse. Results from surveys only of willing respondents may not reflect the state of affairs among all youths.

Moreover, respondents who agree to participate may underreport behaviors that are perceived as undesirable by adults. Therefore, surveys may underestimate behaviors that adults disapprove of (drug use and teen pregnancy) or that are illegal (drug use).

This problem is of particular importance when trends over time are interpreted, because changes in these social factors most certainly influence the willingness to report such behaviors. In our view, surveys have a restricted ability to definitively answer questions about changes in controversial behavior across time.

Survey recruitment methods can create samples in which respondents are not completely independent, with the result that the data are difficult to interpret. For example, the NLSY recruited all individuals between the ages of 14 and 21 who resided in a selected household. Consequently, respondents are not unique, as they would be in a sampling method in which each respondent was chosen separately. Indeed, of the 11,406 respondents selected in 1979, 5,776 had one or more siblings who were also respondents. Because siblings are exposed to similar environments, they are more likely to engage in similar behavior than individuals who are unrelated. None of the published studies acknowledged this fact or presented a method of controlling for it. NLSY officials told us

that although they provide information on how to control for this problem, they believe that many researchers who use the NLSY data do not know about the effects of sampling from households or do not take this into account in their analyses. This may limit both the strength of findings based on the NLSY and the ability to generalize from NLSY respondents to the adolescent population as a whole.

These problems are not unique to surveys of drug use, pregnancy, or dropping out of school. Yet, nonparticipation rates, underreporting, and biases from survey recruitment methods confound estimates of these behaviors and, therefore, place serious limits on the survey method's ability to capture their prevalence among youths.

Reliability and Validity of Findings

The two large studies of behavior associated with drug use both relied on the self-report method of gathering information about teen risk behavior. As a consequence, the potential for underreporting of controversial behavior also decreases the reliability and validity of findings from these studies. Conclusions about links among teen risk behaviors must be considered somewhat unreliable if they are based only on self-reports that are not verified through other methods.

As figures II.1, II.2, II.5, and II.7 indicated, small percentages of adolescents use drugs, become pregnant, or drop out of school. This means that few respondents reported the behavior of interest in each survey. Moreover, even fewer respondents reported more than one of the behaviors. Therefore, even surveys with very large sample sizes relied on very small numbers of observations for analyses of the relationships between drug use and either pregnancy or quitting high school. For example, one of the six recent studies we reviewed reported data from 1981 interviews of 706 women (average age was 24) in which the women attempted to recreate a monthly history of drug use and pregnancies since the 10th and 11th grades. Among the 165 women who had a premarital pregnancy, there were very few women who recalled using drugs (other than marijuana) either at the time of pregnancy or in the preceding months. A group adequate for statistical analysis proved to have used marijuana, although the author found no relationship to premarital pregnancy. We question the validity of analyzing links among teen risk behaviors with so few observations.

It seems reasonable to believe that individuals who are willing to disclose personal information about one controversial behavior may also be more willing to report information about other such behaviors. For

instance, a respondent who admits to using drugs may also admit to a pregnancy. In contrast, a respondent who will not admit to using drugs may also be less likely to admit to a pregnancy. The effects of the general willingness to disclose personal information was not discussed in the literature that we reviewed. We believe that this factor may confound the results of studies that look at links among controversial behaviors, such as teen drug use and pregnancy or dropping out of high school, when those estimates rely exclusively on self-reports.

In general, social science research relies on statistical tests to determine whether or not two behaviors are related. For example, a statistically significant difference in dropout rates between drug users and nonusers might indicate that drug users are more likely to drop out of school than are nonusers. In most cases, statistical tests help researchers differentiate effects that are genuine and important from effects that result from sampling or measurement errors. Occasionally, however, these rather powerful statistical tests can uncover differences that are very small and rather unimportant in absolute terms.

For example, one study of teen drug use and dropping out of high school presented several extensive mathematical analyses, and—given statistically significant findings—reached a conclusion that drug use predicted dropout. This conclusion rests, however, upon a 1.5-percent difference in the likelihood of dropping out between marijuana-users and nonusers. Considering the significant impact of other precursors of school difficulty, this small difference attributable to drug use seems of little practical importance.

Generalizability of Findings

Drawing general conclusions depends on having information on a representative group, and we found limits in the published studies both at one point in time and across time, such that we judged that none could provide strong conclusions about today's youths.

Four of the recent studies on drug use among pregnant teenagers were small in scale and recruited participants from one locality. The investigators in each of these studies discussed the lack of generalizability of their findings. We concur that the samples were too small and too specialized to reach general conclusions about all teens. Moreover, our concern about the validity, or "reality," of the studies' findings indicated that aggregating across the six studies would not yield a clearer picture.

Generalizability to the youth group at large may not even be the appropriate goal. To the extent subcultural norms are important for understanding differences in adolescent risk behavior, generalizability within such subgroups is needed. Racial and ethnic groups are not always adequately represented in survey samples. Therefore, such limited samples miss the mark in not allowing analysis of likely cultural differences in the relationship between drug use and either pregnancy or dropping out of school.

Summary of Research Quality

We concluded that the six studies published since the Committee's 1987 report did not permit general conclusions about the relationships between teen drug use and either pregnancy or dropping out of high school, either in the adolescent population as a whole or among subgroups. Moreover, the findings from these studies appear to be overstated in light of the greater impact of other factors that may underlie problem behaviors. As we attempted to understand why these types of research endeavors fail to impart useful information about teen risk behavior, we reviewed frequently cited articles and interviewed experts who have developed general theories of teen risk behavior.

Theories of Teen Risk Behavior

Authors of theories of teen drug use and teen risk behavior argue that risk behavior does not occur in isolation. Consequently, research that focuses on one or two problem behaviors may miss factors that underlie adolescent risk behavior. Alternatively, research may find spurious relationships between drug use and pregnancy or dropping out of school because they stem from the same underlying factors rather than because drug use causes the others.

A more fruitful approach to adolescent behavior research is to examine constellations of behaviors and to understand adolescents at risk by synthesizing across clusters of risk behaviors that seem associated (Donovan and Jessor, 1985). For example, although it may be difficult to relate youth drug use to either pregnancy or dropping out of school, research has generally found that drug use is related to early precursors of these outcomes, such as early sexual intercourse or poor school performance.

Thus, understanding teen risk behavior requires a richness of information that is not available from current data sources. Current U.S. surveys of youth are fragmented and usually focus on a small set of

problem behaviors. Surveys that examine teen risk behaviors will be more useful when they can illustrate broader pictures of teen behavior.

We found one recent example of more detailed survey research that investigated multiple youth problems with a broad sample. It was not in the United States but in Canada. Though probably nongeneralizable to U.S. youths because of cultural differences between the two populations, the study demonstrates the useful findings that may come from a well-designed, comprehensive, and timely study.[2]

Canadian Youth and AIDS Study

At the Canadian government's request, researchers at Queen's University in Kingston, Ontario, surveyed 38,000 youths, mostly in school but also including 1,033 dropouts and 712 street youths (King et al., 1989; Radford et al., 1989). The primary purpose of the research was to understand youths' knowledge about AIDS and other sexually transmitted diseases. However, these researchers adopted the broader view that attitudes about the health risk of unprotected sex may accompany other uninformed attitudes and careless behaviors that place adolescents at risk in various ways. In addition, the inclusion of dropouts allowed comparisons between those in and out of school on a variety of measures.

The researchers asked questions about sex, birth control, AIDS, sexually transmitted diseases, drugs, alcohol and tobacco use, parental and peer relations, self-esteem, and mental health. They identified dropouts through school records and referrals from other interviewees and gathered data from them by telephone interview. Those in school were surveyed there. Parental sensitivity was an issue in some places; officials in some parts of the country required the researchers to obtain parental permission to conduct interviews. We did not evaluate the technical adequacy of the survey instrument. We recognize that the Canadian survey is limited by the same problems that all surveys of controversial behaviors incorporate—namely, problems of the accuracy of self-reports, refusals to participate, and the general willingness to admit to behavior that is illegal or socially unacceptable. Nevertheless, the Canadian survey balances these problems with timeliness, a broad perspective, and a diverse sample.

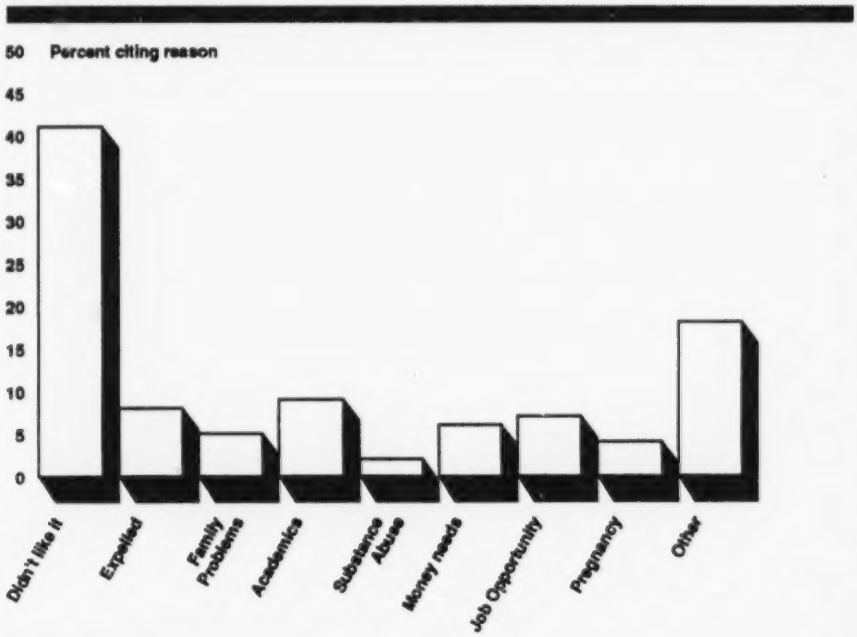
[2]We did review a recent U.S. study of adolescent health issues, including drug use, done by a group of private organizations and federal agencies. The report was not useful for our purposes as it included only 8th and 10th graders and did not ask any detailed questions on sexual behavior.

This major effort was initiated and completed in a year and produced a wealth of contemporary information about Canadian youths. The researchers presented their findings in two reports using simple tables and charts that indicated the percentage of youths who reported the behaviors in question. These reports did not present complicated analyses or attempt to characterize the relationships among these behaviors. In our view, this is an appropriate method of presenting information gained in surveys. Although it may not be possible to generalize the findings to U.S. youths, we present briefly some results of the Canadian work.

Drug Use Among Canadian Dropouts

Few dropouts cited drug use as the main reason for leaving school. When asked to choose among eight main reasons for leaving school, most dropouts (41 percent) reported leaving because they did not like it. See figure III.1. (No further information was provided about this dislike.) Only 2 percent of Canadian dropouts cited substance abuse as the main reason for leaving school.

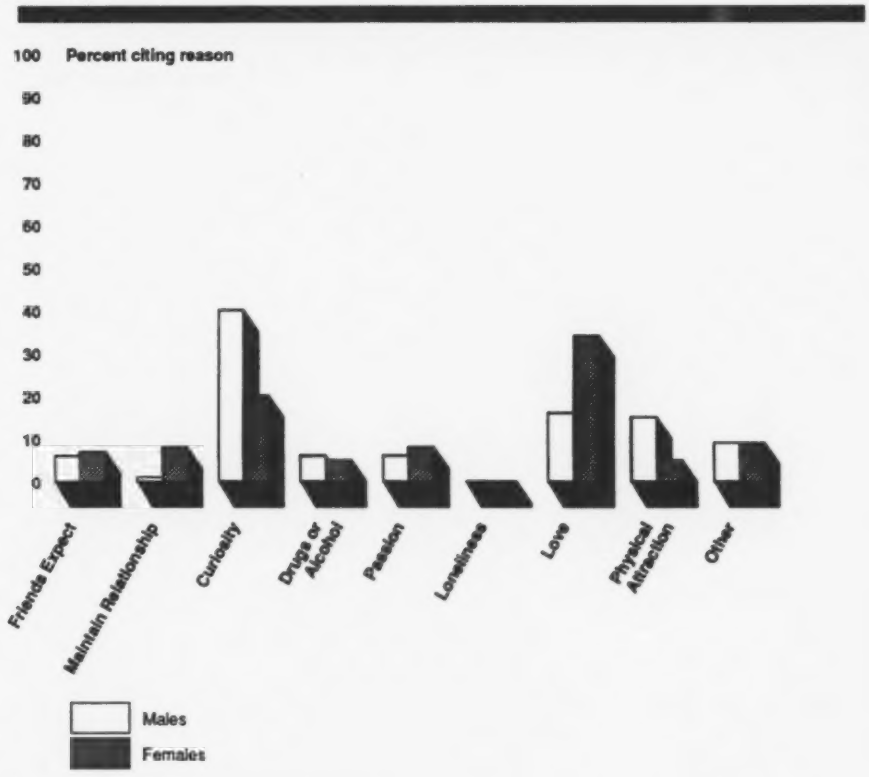
Figure III.1: Main Reasons Canadian Dropouts Gave for Leaving School



Source: Canada Youth and AIDS Study, 1988

Dropouts did not cite drug or alcohol use as a primary reason for engaging in their first sexual intercourse. See figure III.2. Among nine possible reasons, most males (40 percent) reported that they first had sexual intercourse because they were curious; most females reported that they first had sexual intercourse because they were in love. Only 6 percent of males and 5 percent of females cited drug or alcohol use as the main reason for engaging in sexual intercourse. As with any survey, these findings should be interpreted with the understanding that respondents may not (or cannot) always answer truthfully.

Figure III.2: Main Reasons Canadian Dropouts Gave for First Sexual Intercourse

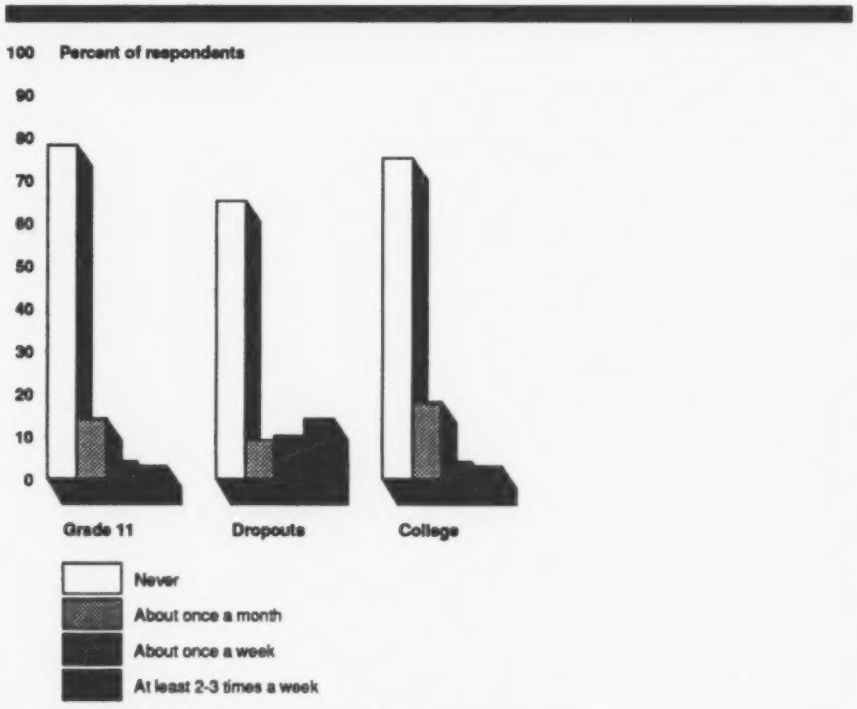


Source: Canada Youth and AIDS Study, 1988

Canadian dropouts were not much more likely to report using drugs than their counterparts in high school or college. See figures III.3 and III.4. College students were somewhat more likely than dropouts to use marijuana "about once a month"; a majority of all groups reported no

marijuana use at all. Unfortunately, comparable questions about drugs other than marijuana were not included in the high school or college student questionnaires, which made it impossible to probe the only startling finding, that 44 percent of dropouts reported using the hallucinogen acid (LSD) "about once a month."[3] About a quarter of the dropout group also reported occasional cocaine use but, again, most reported no use at all.

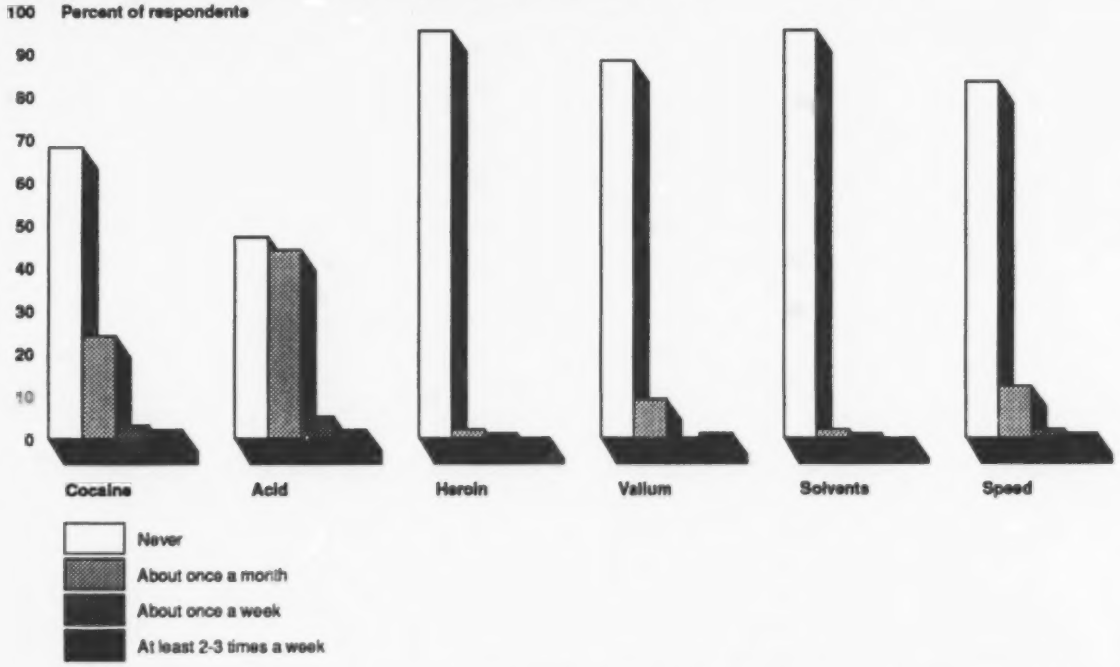
Figure III.3: Use of Marijuana by Canadian Youth Populations



Source: Canada Youth and AIDS Study, 1988

[3]The researchers told us that they are confident in the accuracy of the finding that a large proportion of Canadian dropouts use LSD "about once a month."

Figure III.4: Use of Drugs Other Than Marijuana by Canadian Dropouts



Note: Percentages do not add to 100 (a small percentage refused to reply).
Source: Canada Youth and AIDS Study, 1988.

This study exemplifies the kind of survey effort required to answer broad questions about teen behavior. Some 38,000 students including more than 1,000 dropouts and 700 street youths were surveyed about a wide range of attitudes and behavior. The survey began in early 1989, and the reports were published in late 1989. Data as rich and recent as these (even if collected only by survey) are not common in the United States.

Drug Use and Personality Development

Most studies of behavior associated with teen drug use are flawed by four main problems of interpretation and generalization to the youth population. First, most research designs rely on one-time surveys that limit the interpretation of changes across time. Second, the self-reports from surveys are rarely confirmed by more reliable methods that could increase confidence in the results of the survey. Third, research projects

often base their recruitment of participants on some preselected criterion, such as dropping out of school or becoming pregnant. The lack of a comparison group, such as nondropout or nonpregnant teens, limits the ability to accurately pinpoint predisposing factors that may predate these risk behaviors. Fourth, researchers usually assume a direct relationship between youth problems and drug use where zero drug use is presumed to indicate the most ideal situation and any increased degree of use is assumed to predict an increased likelihood of problems. Although no conclusive evidence has been produced to support this type of research model, most researchers rely upon it for matters of statistical analysis and interpretation.

Strong Methods Yield Valuable Information

We found one long-term study that attempted to overcome all four of these problems (Shedler and Block, 1990). We judged the study to have been well designed and executed. This study is not the first to follow a group of youths across a long period. However, it is the most recent example that we found of this type of research. We recognize that in-depth research incorporates certain limitations that are different from those of surveys. Nevertheless, in our view, the multifaceted nature of drug abuse is better characterized by in-depth investigations of the multidimensional factors that underlie drug abuse.

The sample size (100 youths) was small; however, the researchers followed these youths for 15 years, since their early childhood, to learn about growth and personality development. When youth drug use became an important research topic, these researchers questioned the youths about drugs. The long period of prior evaluation enabled the researchers to reach stronger conclusions about the precursors and risk factors of teen drug use in that small group. Also, the long history of confidentiality that these youths had experienced during the study may have increased their honesty and willingness to report drug use. Indeed, more of these youths reported trying drugs than those youths surveyed by the MSS or NHS.

The study did not address pregnancy or dropping out of school. As with the Canadian study, despite the inability to generalize to all youths, we describe the method and findings to show the kind of research effort needed to improve understanding. Because the focus of the study was general psychological development, an in-depth, long-term study was conducted. The researchers chose a group of 3-year-olds from similar family backgrounds in a California preschool. The basic choice to limit the size of the group decreases the ability to generalize to all youths.

However, it also allowed the researchers to obtain far more detailed information than surveys can provide.

Intensive, Long-Term Observation

Independent psychologists (not the main researchers) observed the children and gathered extensive information about their development at seven different points between the ages of 3 and 18. In addition, when the children were 5 years old, both the mothers and the fathers attended sessions in which the children performed age-appropriate tasks and psychologists studied how the parents gave help, directions, praise, and so forth.

In 1985, when the young people turned 18, independent interviewers with no prior contact with the participants talked with them at length (4 hours of video-taped conversation in most cases) about school, peer relations, family dynamics, personal interests, dating experiences, and also drug use. Separately, four other psychologists used clinical psychology methods to assess the 18-year-olds' personality characteristics from other available observations and test data. Childhood personality assessments had been conducted earlier (at ages 7 and 11) in a similar way, each time by different sets of psychologists.

In this small sample, the 18-year-olds who used drugs frequently were independently characterized as rebellious, hostile, undependable, and emotionally withdrawn. These youths had poor social skills and expressed their unhappiness and poor adjustment through openly antisocial behaviors.

Perhaps contrary to common assumptions, the 18-year-olds who had totally abstained from drugs also exhibited some adjustment problems—albeit far less severe and of a very different kind than those of frequent drug users. They were independently characterized as relatively anxious, tense, and emotionally and behaviorally "over-controlled." These youths also had poor social skills; however, they expressed their poor adjustment through social isolation and emotional withdrawal rather than causing societal problems.

Moreover, long before encountering the availability of drugs, at ages 7 and 11 both the "abstainers" and the "frequent users" had exhibited their different kinds of personality "maladjustment." The parent-child interactions at age 5 for these youths also revealed some clear weaknesses in the ways in which both mothers and fathers praised—or criticized—their children's performance. These early predictors of later

reactions to drug availability may have appreciable implications for understanding the course of later development.

These findings are those of only one study and they are not generalizable beyond this small group. However, the study is an example of a type of research that is needed to give a comprehensive picture of drug use, its antecedents, and youth development. The Canadian study exemplifies the kind of effort required to survey a range of key populations and examine a number of issues related to teen risk behavior. In contrast, this study seems exemplary by showing the results and implications of intensive, long-term examination of a small group using multiple data-gathering techniques. Both suggest the limits of oversimplified study questions and methods.

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November 21, 1989

Mr. Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Bowsher:

The Select Committee on Narcotics Abuse and Control requests a study with factual information, statistical and otherwise, on the correlation between drug use and the high school drop out rate, and teen pregnancy.

As you know, the committee is searching for answers and solutions to the drug problem. One area we are looking at is education. It has become evident that there is a strong correlation between "dropping out" and teen pregnancy and drug abuse. What is not clear is the nature of that complicated relationship -- what is cause, what is effect and what other contributing factors may be involved. What is evident is that schools aren't working as they should.

In order to mobilize further, we need as much relevant, hard factual information as we can get. I am aware that statistical data on these issues may be hard to come by. Your assistance in this endeavor is most appreciated.

Sincerely,

Charles B. Rangel

CHARLES B. RANGEL
Chairman

Major Contributors to This Report

Program Evaluation and Methodology Division, Washington, D.C.

Frederick Mulhauser, Assistant Director
Jacqueline D'Alessio, Project Manager

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